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BANNER & WITCOFF  
1001 G STREET N W  
SUITE 1100  
WASHINGTON, DC 20001

EXAMINER
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JEAN GILLES, JUDE

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/895,532	<b>Applicant(s)</b> WANG, BING	
	<b>Examiner</b> Jude J Jean-Gilles	<b>Art Unit</b> 2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 20-30 and 32-34 is/are rejected.
- 7) ☐ Claim(s) 14-19, 31, 35-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) *  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This office action is responsive to communication filed on 06/29/2001.

#### ***Claim Objections***

1. Claims 14-19, 31, 35, and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-10, 20-28, 30, and 32-34 are rejected under 35 U.S.C. 102(e) as being unpatentable by Donaldson et al (U.S. 6,321,267 B1).

**Regarding claim 1:** Donaldson et al teach a method suitable for use in a communication device for determining the disposition of incoming e-mail from a sender (*column 2, lines 37-41; fig. 1, items 1045-1048*), said method comprising the steps of:  
establishing the identity of the sender to provide a sender identifier (*column 6, lines 14-20; column 14, lines 63-67; fig. 14, items 1401-1406*);

determining a cumulative penalty count value associated with said sender identifier (*column 23, lines 25-36; column 22, lines 25-33; fig. 16, items 1500-1518; note that the penalty count value here is the threshold number points or the matching count*);

retrieving a system resource usage status associated with the communication device (*column 6, lines 42-52*); and

processing the incoming e-mail on the basis of said cumulative penalty count value and said system resource usage status (*column 22, lines 28-33; column 16, lines 12-19*).

**Regarding claim 2:** Donaldson et al teach the method of claim 1 wherein said step of establishing the identity of the sender comprises the step of ascertaining an IP address for the sender (*column 6, lines 14-20*).

**Regarding claim 3:** Donaldson et al teach the method of claim 1 wherein said step of establishing the identity of the sender comprises the step of associating the sender with a peer IP address of the sender TCP connection (*column 6, lines 42-52*).

**Regarding claim 4:** Donaldson et al teach the method of claim 1 wherein said step of determining a cumulative penalty count value comprises the step of assessing a penalty count value to said sender identifier for an undesirable activity associated with the sender (*column 22, lines 23-33; note that the penalty count value here is the threshold number points and if the value of the match point exceeds the threshold, there is an undesirable activity associated with the remote host*).

**Regarding claim 5:** Donaldson et al teach the method of claim 4 wherein said cumulative penalty count value comprises an activity penalty count charged to the

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sender for current undesirable sender activity and a time-dependent penalty count determined from previous undesirable sender activity (*column 22, lines 23-33; column 5, lines 59-67; column 6, lines 1-2; note that attempting to send a copy of the message 100 times suggest that the penalty count dependent on previous undesirable sender's activity*).

**Regarding claim 6:** Donaldson et al teach the method of claim 5 wherein said time-dependent penalty count comprises a zero value subsequent to a pre-established retention period (*column 17, lines 59-64; note that if the result is zero, then the remote host matches the particular node filter*).

**Regarding claim 7:** Donaldson et al teach the method of claim 5 wherein said time-dependent penalty count comprises a prior activity penalty count value reduced by a decay factor (*column 21, lines 12-19; note that the filter scans the node name of the remote host for certain sequences and adds or subtracts points*).

**Regarding claim 8:** Donaldson et al teach the method of claim 4 wherein said undesirable activity comprises a member of the group consisting of: sending a large number of e-mails (*column 1, lines 14-20*), sending e-mails of relatively large sizes (*column 1, lines 17-19*), using a relatively large amount of TCP connection time (*column 26, lines 1-11*), and causing a TCP timeout (*column 33, lines 20-23; Note the appearance of the interrupted TCP connection*).

**Regarding claim 9:** Donaldson et al teach the method of claim 1 wherein said system resource usage status is a function of a member of the group consisting of: the number of concurrent TCP connections being maintained (*column 25, lines 59-64*), the

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number of e-mail files in an incoming message queue, and the amount of disk space being utilized for an incoming message queue (*column 5, lines 52-58; Donaldson et al disclose a message store and its mail queue that keeps undelivered messages for up to a week*).

**Regarding claim 10:** Donaldson et al teach the method of claim 1 wherein said step of processing the incoming e-mail comprises the step of assigning an operating state to the communication device, said operating state being a function of said system resource usage status (*column 16, lines 15-19; Donaldson et al disclose a proxy which deallocates resources and resets internal state variables*).

**Regarding claim 20:** Donaldson et al teach a communication device for determining the disposition of incoming e-mail from a sender, said device comprising: a penalty count filter module (*fig. 13, item 1401*) having

means for identifying the sender (*column 6, lines 14-20; column 14, lines 63-67*);

means for assigning a penalty count to the sender, said penalty count being a function of undesirable activity associated with the sender (*column 8, lines 1-17*);

means for determining a resource usage value for said communication device in receiving e-mail (*column 16, lines 12-19*);

means for specifying an operating state for said penalty count filter module, said operating state being a function of said resource usage value (*column 16, lines 12-19*); and

an accept/reject filter for disposing of the incoming e-mail on the basis of said sender penalty count and said operating state (*column 3, lines 43-45*).

**Regarding claim 21:** Donaldson et al teach the method of claim 20 wherein said means for identifying the sender includes means for obtaining at least one of a Domain Name Service verification (*column 12, lines 45-49*) and a peer IP address of the sender TCP connection (*fig. 14, item 1404; fig. 13, item 1470*).

**Regarding claim 22:** Donaldson et al teach the method of claim 20 wherein said undesirable activity comprises a member of the group consisting of:

sending a large number of e-mails (*column 1, lines 14-20*), sending e-mails of relatively large sizes (*column 1, lines 17-19*), using a relatively large amount of TCP connection time (*column 26, lines 1-11*), and causing a TCP timeout (*column 33, lines 20-23; Note the occurrence of the interrupted TCP connection*).

**Regarding claim 23:** Donaldson et al teach the method of claim 20 wherein said system resource usage status is a function of a member of the group consisting of: the number of concurrent TCP connections being maintained (*column 25, lines 59-64*), the number of e-mail files in an incoming message queue, and the amount of disk space being utilized for an incoming message queue (*column 5, lines 52-58; Donaldson et al disclose a message store and its mail queue that keeps undelivered messaged for up to a week*).

**Regarding claim 24:** Donaldson et al teach a communication device for determining the disposition of incoming e-mail from a sender, said device comprising:  
a sender penalty count data structure for storing a current penalty count value

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associated with the sender (*column 23, lines 25-36; fig. 16, items 1500-1518; note that the data structure is represented by table 4 in column 23 and that matching count represents the penalty count*);

a system resource usage status file for storing a current usage status value for device e-mail processing resources (*column 17, lines 27-48; note that the system resource becomes unavailable for email processing once the proxy determines that the remote network has been placed in a blacklisted database*); and

an accept/reject filter for disposing of the incoming e-mail on the basis of said penalty count value (*column 3, lines 43-45*) and said usage status (*column 17, table 1, hostname values*).

**Regarding claim 25:** Donaldson et al teach a method claim 24 wherein said sender penalty count data structure includes an entry comprising a member of the group consisting of:

- a sender identification value (*column 22, lines 40-44*),
- a cumulative penalty count value (*column 22, lines 46-49*),
- a cumulative e-mail count (*column 32, lines 41-45; note that the number of recipient here represents the number of emails*),
- a total e-mail size (*column 32, lines 45-48*),
- a total TCP connection time (*column 26, lines 9-11*), and
- a timestamp value (*column 4, line 27*).



**Regarding claim 26:** Donaldson et al teach a method suitable for use in a communication device for determining the disposition of incoming e-mail from a sender, said method comprising the steps of:

identifying the e-mail sender by determining a sender IP address (*column 6, lines 14-24*);

obtaining a previous sender penalty count value calculated for said sender IP address (*column 22, lines 40-49; note that the matching mechanism is used here as the penalty count and that the 32-bit address for the remote host is used to calculate the IP address of its 20 neighbors*); and

accepting or rejecting the incoming e-mail based on said sender penalty count value (*column 3, lines 43-45*) and said usage status (*column 17, table 1, hostname values*).

**Regarding claim 27:** Donaldson et al teach the method of claim 26 further comprising the steps of:

maintaining a behavior trace table entry for the e-mail sender (*column 21-22, table 3*); and

determining said previous sender penalty count from said behavior trace table (*column 21-22, table 3, offset value*).

**Regarding claim 28:** Donaldson et al teach the method of claim 27 further comprising the step of updating sender behavior values in said trace table entry in response to receipt of a sender e-mail (*column 17, lines 65-67; column 18, lines 1-7; fig. 14, item 1408; note that if the sender's IP address matches an entry in the blacklist*

*database, the proxy server issues an error reply to the remote host, closes the connection, logs the rejected connection, and exits without any email being transferred).*

**Regarding claim 30:** Donaldson et al teach the method of claim 28 wherein said step of updating sender behavior values comprises the steps of:

reducing said behavior trace table value by a decay factor (*column 21, lines 45-67; column 21, table 3; the offset value has a decay factor +1*); and

adding a current behavior trace table value to said corresponding reduced behavior trace table value (*column 21, lines 45-67; column 21, table 3*).

**Regarding claim 32:** Donaldson et al teach the method of claim 26 wherein said sender penalty count value is determined from undesirable sender activity occurring over a pre-established retention period (*column 5, lines 52-58; note that the relay host will usually keep undelivered messages in its queue for up to a week*).

**Regarding claim 33:** Donaldson et al teach the method of claim 32 wherein said undesirable activity comprises a member of the group consisting of:

sending a large number of e-mails (*column 1, lines 14-20*), sending e-mails of relatively large sizes (*column 1, lines 17-19*), using a relatively large amount of TCP connection time (*column 26, lines 1-11*), and causing a TCP timeout (*column 5, line 52-54; column 33, lines 20-23; note the occurrence of the interrupted TCP connection*).

**Regarding claim 34:** Donaldson et al teach the method of claim 26 further comprising the step of updating said sender penalty count value (*column 21, lines 12-15*).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11-13 are rejected under 35 U.S.C. 102(e) as being unpatentable over Donaldson et al (U.S. 6,321,267 B1) in view of Munger et al (U.S. 6,502,135 B1).

**Regarding claim 11:** Donaldson et al teach the method of claim 10 wherein said operating state is a member of the group consisting of: a normal operating state (*column 16, lines 15-19*), a selective-rejection operating state (*column 14, lines 63-67, column 15, lines 1-2*), but fail to disclose a random-rejection operating state.

However, Munger et al (*column 26, lines 14-24*) teach a method that comprises a step with "*random sync values that feed a random Number Generator and that are compared to the IP address to validate or reject the incoming packet*".

It would have been obvious for an ordinary skill in the art at the time of the invention to use the random rejection of incoming packets of Munger et al and substitute the packets with incoming email messages of Donaldson et al to obtain to random rejection of undesirable email messages.

Munger et al teach that it is old and well known in the communications art to get the advantage of using a random rejection to allow filtering of packets entering a network to enhance network security. An artisan in the networking art at the time of the

invention would have been motivated to include this mechanism to get the advantage in rejecting undesirable emails in an electronic network .

**Regarding claim 12:** Donaldson et al and Munger et al teach all the limitations of claim 11 and Donaldson et al further disclose a method wherein, for said selective-rejection state, if said cumulative penalty count value has a zero value, said step of processing the incoming e-mail comprises the step of accepting the incoming e-mail (*column 17, lines 58-64*).

**Regarding claim 13:** Donaldson et al teach all the limitations of claim 11, but fail to teach a method wherein, for said selective-rejection state, if said cumulative penalty count value has a nonzero value, said step of processing the incoming e-mail comprises the steps of: specifying a rejection factor; generating a random number; and randomly rejecting the incoming e-mail on the basis of said rejection factor and said random number.

However, Munger et al (*column 18, lines 52-56*) teach a method that comprises a step with *"a fast packet rejection mechanism that is a factor for rejecting invalid packets"*. Munger et al (*column 24, lines 63-67*) disclose a step *"to generate a Random Number Sequence that yields a specific random number value, which in turn yields a specific IP address"*.

It would have been obvious for an ordinary skill in the art at the time of the invention to combine the rejection factor and the random number value generated by Munger et al, and integrate them into Donaldson et al incoming email from the remote sender to randomly reject undesirable email messages.

Munger et al teach that it is old and well known in the communications art to get the advantage of using a rejection factor and a random number to randomly reject incoming e-mails to allow filtering of junk mails and as a result to enhance network security. An artisan in the networking art at the time of the invention would have been motivated to include this combination to get the advantage in rejecting undesirable emails in an electronic network .

6. Claims 29 are rejected under 35 U.S.C. 102(e) as being unpatentable over Donaldson et al (U.S. 6,321,267 B1) in view of Barchi et al (U.S. 6,507,866 B1).

**Regarding claim 29:** Donaldson et al teach all the limitations of claim 28 wherein said sender behavior values include a member of the group consisting of: the number of e-mails (*column 32, lines 41-47; note that the number of recipient here represents the number of emails*), and total time of TCP connection time (*column 14, lines 43-47*), but fail to teach a method with a sender behavior values that includes the total size of e-mails.

However, Barchi et al (*column 9, lines 1-35*) teach a step to define a sample email filtering system "*to include all e-mail messages that are tracked by unexpired records within the list, where N is a predetermined integer*".

It would have been obvious for an ordinary skill in the art at the time of the invention to add the total size of e-mails of Barchi et al to the number of e-mails and the total time of TCP connection time of Donaldson et al to complete the list of sender

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behavior values and enhance the filtering of undesirable email messages in the system.

Barchi et al teach that it is old and well known in the communications art to get the advantage of using a mechanism to find the total size of incoming mails in an electronic network to enhance security. An artisan in the networking art at the time of the invention would have been motivated to include this step to get the advantage in rejecting undesirable emails in an electronic network.

**Conclusion**

7. Any inquiry concerning this communication or earlier communications from examiner should be directed to Jude Jean-Gilles whose telephone number is (703) 305-0269. The examiner can normally be reached on Monday-Thursday and every other Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley, can be reached on (703) 308-5221. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3719.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Jude Jean-Gilles

Patent Examiner

Art Unit 2143

JJG

September 29, 2004

  
DAVID WILEY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100